

ELECTRICAL SPECIFICATIONS
SCOPE OF WORK

THE SCOPE OF WORK FOR THIS PROJECT IS TO SUPPLY AND INSTALL ALL INDICATED CONDUIT INFRASTRUCTURE, A NEW DISTRIBUTION AND NEW PUMP CONTROLS IN ACCORDANCE WITH THE INTENT OF THESE SPECIFICATIONS AND DRAWINGS AND ALL APPLICABLE CODES. THESE ITEMS INCLUDE BUT ARE NOT LIMITED TO THE FOLLOWING:

- SUPPLY AND INSTALL ALL BURIED CONDUITS, LANDSCAPING BOXES, JUNCTION BOXES AND CONDUITS IN ACCORDANCE WITH THESE PLANS.
- SUPPLY AND INSTALL ALL RECEPTACLES AS INDICATED ON THE PLANS. ALL RECEPTACLES FOR EQUIPMENT SHALL BE WIRED WITH INDIVIDUAL NEUTRALS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROPER COORDINATION OF ALL ITEMS WITH OTHER TRADES TO ENSURE THAT ALL ITEMS REQUIRING ELECTRICAL ARE INSTALLED AS REQUIRED.
- SUPPLY AND INSTALL A WELL PUMP CONTROL PANEL AS SPECIFIED ON THE DRAWINGS.
- SUPPLY AND INSTALL TWO NEW BREAKERS FOR THE 600V DISTRIBUTION.
- SUPPLY AND INSTALL THE NEW TRANSFORMER TR-3 AND PANEL ODP.
- COORDINATE AND PAY FOR ALL TRENCHING AND FISHING.
- PROVIDE POWER SUPPLY FOR HEAT TRACING.

EXECUTION SPECIFICATION

THE CONTRACT INCLUDES THE FURNISHING OF LABOUR, MATERIAL, EQUIPMENT, AND SERVICES NECESSARY FOR A COMPLETE ELECTRICAL SYSTEM AS SHOWN ON THE DRAWINGS AND OPERATING TO THE COMPLETE SATISFACTION OF THE ENGINEER AND LOCAL INSPECTIONS BRANCH.

PROVIDE ONLY NEW C.S.A. APPROVED EQUIPMENT OF UNIFORM MANUFACTURE THROUGHOUT.

COORDINATE ALL WORK WITH OTHER TRADES.

OBTAIN NECESSARY PERMITS AND PAY PERMIT FEES.

EXECUTE WORK IN A FIRST-CLASS AND WORKMANLIKE MANNER.

LEAVE PREMISES IN A CLEAN AND SATISFACTORY CONDITION ON COMPLETION OF ELECTRICAL WORK.

DRAWING IS DIAGRAMMATIC ONLY, AND DOES NOT SHOW ALL DETAILS. INFORMATION INVOLVING ACCURATE MEASUREMENTS OF THE BUILDING, STRUCTURAL STEEL, FURNITURE LAYOUT, ETC. ARE TO BE TAKEN IN THE FIELD. THE CONTRACTOR SHALL MAKE, WITHOUT ADDITIONAL EXPENSE TO OWNER NECESSARY CHANGES OR ADDITIONS TO RUNS TO ACCOMMODATE FINAL CONDITIONS.

LOCATION OF DEVICES MAY BE ALTERED WITHOUT CHARGE TO OWNER, PROVIDED THE CHANGE IS MADE BEFORE FINAL INSTALLATION, IT DOES NOT NECESSITATE ADDITIONAL MATERIALS, AND ALL SUCH CHANGES ARE RATIFIED BY OWNER'S REPRESENTATIVE. RECORD CHANGES ON RECORD SET OF DRAWINGS.

DRAWING SHOWS GENERAL LOCATION FOR EQUIPMENT AND CIRCUITS; INSTALL THEM IN SUCH A WAY AS TO CONSERVE HEADROOM AND INTERFERE AS LITTLE AS POSSIBLE WITH THE FREE USE OF SPACE THROUGH WHICH THEY PASS.

EXAMINE THE SITE, BUILDING AND LOCAL CONDITIONS AFFECTING WORK OF THIS CONTRACT. EXAMINE ARCHITECTURAL, STRUCTURAL, MECHANICAL AND ELECTRICAL CONDITIONS TO ENSURE WORK CAN BE PERFORMED WITHOUT CHANGES, AS SHOWN ON CONTRACT DRAWINGS. NO ALLOWANCE WILL BE MADE LATER FOR NECESSARY CHANGES, UNLESS IT HAS BEEN BROUGHT TO ENGINEER'S ATTENTION IN WRITING, PRIOR TO CLOSING OF TENDERS.

CONTRACTOR SHALL KEEP AN ONGOING SET OF 'RECORD' DRAWINGS ON SITE FOR REVIEW BY OWNER OR ENGINEER AT ANY TIME. DRAWINGS TO BE TURNED OVER UPON COMPLETION OF PROJECT.

ANY PENETRATIONS ON FINISHED SURFACES SHALL BE FINISHED WITH TRIM. TRIM FINISHES SHALL BE BRUSHED STAINLESS STEEL AND SHALL INCLUDE TRIM RINGS, ETC. WHERE PENETRATIONS ARE MADE IN FIRE WALLS.

INSTALL ALL EQUIPMENT IN ACCORDANCE WITH MANUFACTURERS' INSTRUCTIONS, THE CANADIAN ELECTRICAL CODE AND ALL OTHER AUTHORITIES HAVING JURISDICTION. CONTRACTOR SHALL COORDINATE WITH OTHER TRADES TO ENSURE PROPER INSTALLATION.

KEEP 1M CLEAR IN FRONT OF ALL PANELBOARDS AND OTHER ELECTRICAL EQUIPMENT REQUIRING ACCESS

SUBMITTALS

SUBMIT PRODUCT DATA FOR ALL EQUIPMENT. ACCEPTABLE MATERIALS SHALL BE AS SPECIFIED OR ENGINEER OR OWNER APPROVED. PROVIDE THREE (3) COPIES OF OPERATING AND MAINTENANCE MANUALS.

COORDINATION

THE CONTRACTOR IS RESPONSIBLE TO DETERMINE THE SCOPE OF THE WORK REQUIRED FOR EACH TRADE. WORK SHALL BE DONE BY THE APPROPRIATE SKILLED TRADE. ALL TRADES MUST COORDINATE WORK TO ENSURE THAT THE ENTIRE SCOPE OF THE PROJECT IS COVERED. THERE SHALL BE NO ALLOWANCES GIVEN FOR ITEMS WHICH RESULT AS A FAILURE OF CO-ORDINATION. THE CONTRACTOR WILL REVIEW THE DRAWINGS WITH ALL TRADES PRIOR TO TENDER SUBMISSION TO RESOLVE ALL COORDINATION ISSUES.

PRODUCT SPECIFICATIONS:

RECEPTACLES

- DUPLIX RECEPTACLES, CSA TYPE 5-15 R, 125 V, 15 A, U GROUND
- SUITABLE FOR NO. 10 AWG FOR BACK AND SIDE WIRING.
- BREAK-OFF LINKS FOR USE AS SPLIT RECEPTACLES.
- EIGHT BACK WIRED ENTRANCES, FOUR SIDE WIRING SCREWS.
- TRIPLE WIPE CONTACTS AND RIVETED GROUNDING CONTACTS.
- HUBBELL 5252 OR EQUIVALENT - WHITE

-ALL COVERPLATES SHALL BE BRUSHED STAINLESS STEEL WITH LAMACOIDS FOR CIRCUITING.

WIRING METHODS

ALL REGULAR WIRING SHALL BE RWU90 IN RIGID PVC CONDUIT.

ALL POWER WIRING SHALL BE MINIMUM #12AWG. WHERE A CIRCUIT IS 20A MINIMUM WIRING SIZE SHALL BE #10AWG.

ALL CONDUITS INSTALLED SHALL CONTAIN A PULL CORD AND GROUND WIRE.

DISCONNECT SWITCHES

NON-FUSIBLE, HORSEPOWER RATED DISCONNECT SWITCH IN CSA (WEATHERPROOF WHERE INDICATED) ENCLOSURE.

- PROVISION FOR PADLOCKING IN SWITCH OFF POSITION.
 - MECHANICALLY INTERLOCKED DOOR TO PREVENT OPENING WHEN HANDLE IN ON POSITION
 - QUICK-MAKE, QUICK-BREAK ACTION
 - ON-OFF SWITCH POSITION INDICATION ON SWITCH ENCLOSURE COVER.
- ACCEPTABLE MANUFACTURER: SQUARE 'D', CUTLER HAMMER.

GROUNDING

ALL GROUNDING SHALL BE IN ACCORDANCE WITH CANADIAN ELECTRICAL CODE REQUIREMENTS.

DISTRIBUTION EQUIPMENT

MATCH EXISTING.

CONTROL PANEL

NEW PUMP CONTROLS SHALL BE AN ABB 550 VFD OR EQUIVALENT MOUNTED IN A CONTROL PANEL. PROVIDE ROSEMOUNT OR EQUIVALENT PRESSURE TRANSMITTER. PANEL TO BE FABRICATED IN A CSA SHOP, MANCO OR EQUIVALENT. PANEL SHALL HAVE LOCAL DISCONNECT.

HEAT TRACE

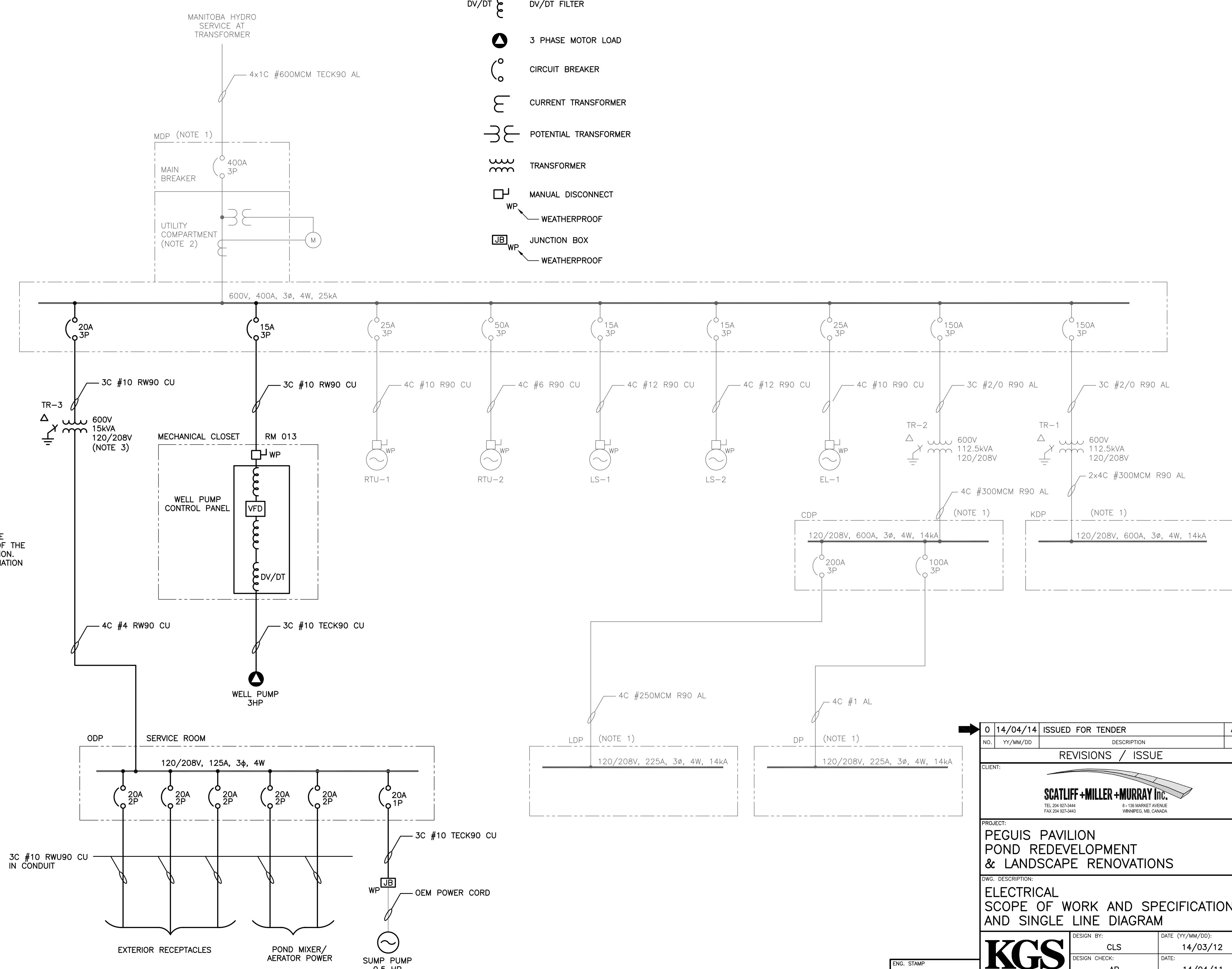
SUPPLY AND INSTALL A NEW SELF-REGULATING HEAT TRACE AND CONTROLLER TO MEET WATER PIPING REQUIREMENTS. ACCEPTABLE MANUFACTURER: PENTAIR OR EQUIVALENT.

LEGEND:

- VARIABLE FREQUENCY DRIVE
- LOAD REACTOR (3% IMPEDANCE)
- DV/DT FILTER
- 3 PHASE MOTOR LOAD
- CIRCUIT BREAKER
- CURRENT TRANSFORMER
- POTENTIAL TRANSFORMER
- TRANSFORMER
- MANUAL DISCONNECT
- WEATHERPROOF
- JUNCTION BOX
- WEATHERPROOF

NOTES:

1. NOT ALL EXISTING LOADS ARE SHOWN.
2. GREY SHADED LINEWEIGHT DENOTES EXISTING.
3. TRANSFORMER TR-3 MOUNTED ABOVE PANEL ODP.



1 SINGLE LINE DIAGRAM
E04 SCALE: N.T.S.



ENG. STAMP

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